Anatomic pathology selected abstracts

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Pathologic abnormalities in biopsy samples from the appendiceal orifice

June 2022—Appendiceal orifice mucosae often appear inflamed endoscopically, even when other colonic segments appear normal. Histological findings in biopsy samples taken from endoscopically abnormal mucosae may simulate a variety of inflammatory colitides. The authors performed a double-cohort study to evaluate the clinical implications of inflammatory changes isolated to the appendiceal orifice. They reviewed biopsy samples from 26 histologically abnormal appendiceal orifices. Twenty-five control cases were culled from endoscopically normal-appearing (n=11) and abnormal (n=14) appendiceal orifices, all of which revealed normal histology. Histological findings were correlated with presentation, medication history, findings at other colonic sites, and clinical outcomes. Study cases displayed active inflammation (n=12), chronic active inflammation (n=13), or features simulating collagenous colitis (n=1). Eighteen patients had biopsies taken from other colonic sites that revealed benign polyps (n=10) or displayed active (n=4) or chronic active (n=4) inflammation. All patients with findings isolated to the appendiceal orifice were asymptomatic at their most recent clinical follow-up. Four of eight of the patients with inflammation in other biopsy samples were ultimately diagnosed with ulcerative colitis, in keeping with the well-established role of the appendix as a skip lesion in that disorder. Control patients presented for screening colonoscopy (n=19), iron deficiency anemia (n=3), or change in bowel habits (n=3). None reported gastrointestinal symptoms on follow-up, regardless of the endoscopic appearance of the appendiceal orifice. The authors concluded that isolated inflammation of appendiceal orifice mucosae should not be regarded as a feature of evolving inflammatory bowel disease or other types of chronic colitis.

Castrodad-Rodrıguez CA, Choudhuri J, El-Jabbour T, et al. Clinical significance of pathologic abnormalities in biopsy samples from the appendiceal orifice. *Histopathology*. 2021;79:751–757.

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Discordance between transient elastography and liver biopsy in evaluations for fibrosis and steatosis

Vibration-controlled transient elastography (VCTE) is a noninvasive method for evaluating liver fibrosis and steatosis. It easily can be performed in the outpatient setting and has been suggested as an alternative to liver biopsy. However, discrepancies between VCTE and biopsy commonly occur. Patient characteristics, procedure performance, and liver features can impact the reliability of VCTE results. The authors identified 82 patients who received VCTE and biopsy within one month of each other to elucidate the clinical scenarios that may require both VCTE and liver biopsy. In the study, 29 (35.4 percent) patients had a major fibrosis discrepancy, which was defined as a finding of advanced fibrosis or cirrhosis by VCTE and minimal or no fibrosis on biopsy. Discordance in the fibrosis reading was significantly associated with increased body mass index. Liver features that disrupt the liver matrix, including steatohepatitis, inflammation, congestion, and cholestasis, have been found to contribute to discrepancies. Advanced fibrosis or cirrhosis on liver biopsy was detected by VCTE in all patients (n=28). However, VCTE was less sensitive for detecting steatosis, as it missed the diagnosis in 19 percent (four of 21) of patients with moderate to severe steatosis on biopsy. While liver biopsy traditionally has been used for diagnosis, the emergence of noninvasive tools to evaluate for liver fibrosis and steatosis has led to the use of biopsies to confirm findings from noninvasive procedures. VCTE is a highly sensitive tool for detecting liver fibrosis, but it is not as specific as biopsy. Therefore, liver biopsy remains the gold standard for confirming liver fibrosis.

Fang JM, Cheng J, Chang MF, et al. Transient elastography versus liver biopsy: discordance in evaluations for fibrosis and steatosis from a pathology standpoint. *Mod Pathol*. 2021;34(10):1955–1962.

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Standardizing the reporting of pancreatoduodenectomy specimens for PDAC

Recent literature and international meetings have shown that there are significant differences regarding the definition of what constitutes margins and how best to document the pathologic findings in pancreatic ductal adenocarcinoma. To capture the current practice, the Pancreatobiliary Pathology Society grossing working group conducted an international multispecialty survey encompassing 25 statements regarding the pathologic examination and reporting of pancreatic ductal adenocarcinoma, particularly in pancreatoduodenectomy specimens. The survey results highlighted several discordances. However, pathologists and surgeons reached a consensus or high concordance on the following statements. The pancreatic neck margin should be submitted en face and if any tumor is present on the slide, it should be considered equivalent to R1 resection. The uncinate margin should be submitted in its entirety and perpendicularly sectioned, and the distance of the tumor from the uncinate margin should be reported. Surfaces such as the vascular groove, posterior surface, and anterior surface should be examined and documented. Carcinoma in celiac axis specimens submitted separately should be staged as pT4. Although the participants did not reach a consensus regarding what constitutes R1 versus R0 resection, most agreed that ink on the tumor or no more than 1 mm from the tumor is equivalent to R1 only in areas designated as a margin, not a surface. The authors concluded that this survey serves as a starting point for further standardizing pancreatoduodenectomy grossing and reporting protocols.

Dhall D, Shi J, Allende DS, et al. Towards a more standardized approach to pathologic reporting of pancreatoduodenectomy specimens for pancreatic ductal adenocarcinoma: cross-continental and cross-specialty survey from the Pancreatobiliary Pathology Society Grossing Working Group. *Am J Surg Pathol*. 2021;45:1364–1373.

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Clinicopathologic study of CD34-negative solitary fibrous tumor

CD34-negative solitary fibrous tumors are rare and have not been studied comprehensively. The authors retrospectively reviewed all cases of solitary fibrous tumor (SFT) confirmed with STAT6 IHC or *STAT6* gene fusion between 2013 and 2020 and collected pertinent clinicopathologic information. Of 244 cases, 25 (10 percent) lacked CD34 expression by IHC. Compared with CD34-positive SFTs, CD34-negative SFTs were more likely to arise in the head and neck area (32 percent CD34-negative versus 24 percent CD34-positive) and present as metastatic disease (28 percent CD34-negative versus one percent CD34-positive). Forty-eight percent of CD34-negative SFTs versus 22 percent of CD34-positive SFTs exhibited high-grade cytologic atypia, such as hypercellularity, round cell or anaplastic morphology, or nuclear pleomorphism. There were no significant differences in the distributions of age, gender, tumor size, mitotic count, tumor necrosis, or risk stratification between CD34-negative and CD34-positive SFTs. In addition, only 56 percent of CD34-negative SFTs displayed a typical hemangiopericytoma-like vascular pattern. Special histologic features among CD34-negative SFTs included prominent alternating hypercellular or fibrous and hypocellular myxoid areas with curvilinear vessels mimicking low-grade fibromyxoid sarcoma, pulmonary edema-like microcystic changes, and prominent amianthoid collagen fibers. The authors concluded that compared with their CD34-positive counterparts, CD34-negative SFTs are more likely to present as metastatic disease, show high-grade nuclear atypia, and lack the characteristic hemangiopericytoma-like vasculature, posing a unique diagnostic challenge. It may be prudent to use STAT6 IHC or molecular studies, or both, in soft tissue tumors that appear CD34-negative and lack conventional SFT histopathologic characteristics.

Dermawan JK, Rubin BP, Kilpatrick SE, et al. CD34-negative solitary fibrous tumor: A clinicopathologic study of 25 cases and comparison with their CD34-positive counterparts. *Am J Surg Pathol*. 2021;45(12):1616–1625.

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Discordance in diagnosis of melanocytic lesions and its impact on clinical management

Accurate diagnosis of melanocytic lesions is fundamental for appropriate clinical management. The authors conducted a study to evaluate the degree of discordance between histopathologic diagnoses of melanocytic lesions at referring institutions and at a tertiary referral cancer center, as well as the potential impact of such discordance on clinical management. The authors retrospectively identified all patients referred to their comprehensive cancer center for evaluation of a melanocytic lesion from January 2010 to January 2011. They compared the histopathologic diagnosis for each patient provided by the referring institution with the histopathologic diagnosis provided by a dermatopathologist at their cancer center. The authors classified discordance as major if it resulted in a change in clinical management and minor if it did not. The study consisted of 1,521 cases. The concordance rates were 72.2 percent (52 of 72) for dysplastic nevus, 75 percent (15 of 20) for all other types of nevi, 91.1 percent (143 of 157) for melanoma in situ, 96.1 percent (758 of 789) for invasive melanoma, and 99.6 percent (478 of 480) for metastatic melanoma. Major discordance was found in 20.2 percent (307 of 1,521) of cases, and minor discordance was found in 48.8 percent (742 of 1,521) of cases. The guideline-based treatment recommendation based on the cancer center diagnosis was more extensive in 5.9 percent (89 of 1,521) of patients and less extensive in five percent (76 of 1,521) of patients than the guideline-based treatment recommendation based on the referring institution diagnosis. The findings underscore the importance of having dermatopathologists conduct a secondary histopathologic review of melanocytic lesions, as they may identify significant changes in diagnosis, tumor classification, and staging, leading to beneficial changes in recommendations for clinical management.

Ronen S, Al-Rohil RN, Keiser E, et al. Discordance in diagnosis of melanocytic lesions and its impact on clinical management. *Arch Pathol Lab Med*. 2021;145(12):1505–1515.

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Concise reporting of benign endometrial biopsies versus descriptive reporting

In the United Kingdom, endometrial biopsy reports traditionally consist of a morphologic description followed by a conclusion. Recently published consensus guidelines for reporting benign endometrial biopsies advocate the use of standardized terminology. The authors conducted a study to assess the acceptability and benefits of this simplified diagnosis-only format for reporting non-neoplastic endometrial biopsies. For the study, two consultants reported consecutive endometrial biopsies using one of three formats—diagnosis only, diagnosis plus an accompanying comment, and traditional descriptive format. Members of a multidisciplinary team were asked to complete an anonymized survey containing three questions that were designed to assess the acceptability of a diagnosis-only report and invite feedback. Four senior histopathology trainees and two consultants interested in gynecologic pathology assessed 53 benign endometrial biopsies selected from 370 such benign biopsies reported using these guidelines. They evaluated the biopsies for reproducibility of report structure (using the three formats) and final diagnosis. Of the 370 consecutive biopsies, 245 (66 percent) were reported as diagnosis only, 101 (27 percent) as diagnosis plus a brief comment, and 24 (seven percent) as diagnosis following a morphologic description. Of the 43 survey respondents—28 gynecologists, 11 pathologists, and four clinical nurse specialists—40 (93 percent) preferred a diagnosis-only format, and three (seven percent) were against or uncertain about omitting a morphologic description. Among three histopathology consultants and four senior trainees, there was majority agreement on the reporting format in 53 of 53 (100 percent) and 52 of 53 (98 percent) biopsies. The authors concluded that reporting benign endometrial biopsy findings within standardized, well-understood diagnostic categories is an acceptable alternative to traditional descriptive reporting and that the latter should be reserved for the minority of cases that do not fit into specific categories. This revised approach has the potential to improve the uniformity and reproducibility of reporting in other specialties as well.

Kriplani D, Olivar AA, Tchrakian N, et al. Concise reporting of benign endometrial biopsies is an acceptable alternative to descriptive reporting. *Int J Gynecol Pathol*. 2022;41(1):20–27.

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